DOCUMENT RESUME

ED 119 772 JC 760 165

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TITLE Proposal: A Microfilm System for Long Beach City College.
INSTITUTION Long Beach City Coll., Calif.
NOTE 23p.

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage
DESCRIPTORS Academic Records; Community Colleges; Costs; Equipment; Indexing; Information Retrieval; *Information Storage; *Junior Colleges; *Microfilm; Multicampus Districts; Office Management; *Recordkeeping; Records (Forms); *Student Records
IDENTIFIERS Long Beach Community College District

ABSTRACT

In order to effectively manage the increasing quantity of student records of the Long Beach Community College District, a systematic microfilming of many of the student records must begin in the immediate future. This section of the Admissions and Records Staff's 1975 review of the records system recommends that a 16mm Cartridge System (from a list of six alternatives) be implemented in 1976. Considerations in the choice of this system included: good interface with data processing, including an on-line transcript system; ease of indexing and retrieval of records; reasonable cost of implementation; moderate level of personnel training. This document lists the specific pieces of equipment that will be required to implement the system, and gives the quantity, specifications, and rationale for each piece. It also discusses the necessary physical set up of the Admissions and Records offices. Alternate indexing systems, interface with data processing, and security are discussed, and an itemized budget for implementation is presented. Finally, an implementation schedule is suggested with a completion date of December 1, 1976. (NHM)

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PROPOSAL

A MICROFILM SYSTEM

FOR

LONG BEACH CITY COLLEGE

PREPARED BY

MICHAEL L. MAAS

DEAN, ADMISSIONS & RECORDS

JC 760 165

CONTENTS

Overview 1

Proposed Microfilm System 2

Implementation Schedule 15

OVERVIEW

Long Beach Community College District is a multi-campus District with two main campuses, five extension campuses, and sixty-nine Satellite Centers. Since its inception in 1927, student records and files have been created in ever increasing quantities. In an effort to eliminate and effectively manage all student records of the College, a review of the entire records system has been made by the Admissions and Records Staff of the College. One of the conclusions of this study was that a systematic microfilming of many of the student records must begin in the immediate future. In addition, a records retention manual must be established for the identification of all records and in turn legal procedures established for the necessary retention and positive destruction of out-dated records.

Since microfilming and procedures for the retention of records are interrelated, both systems must be developed and implemented simultaneously. For this reason, this proposal has been divided into two sections. The first section discusses the proposed microfilm system, and the second section illustrates the proposed records retention manual.

PROPOSED MICROFILM SYSTEM

Introduction:

In the development of this microfilm proposal, numerous microfilm systems were reviewed by the Admissions and Records Staff. In systematically studying the systems, six types of systems were readily apparent. These were as follows:

a. Microfiche System
b. Roll Film System
c. 16mm Cartridge System
d. Aperture Card System
e. Ultrafiche System
f. Miracode System

After careful evaluation of all systems, it was determined by the Admissions and Records Staff that the 16mm Cartridge System was the most appropriate system for the various microfilming applications envisioned for the College. The reasons for this decision are as follows:

a. The Cartridge System provides the opportunity for the best interface with data processing in terms of computer output microfilm and key-to-tape indexing procedures.
b. The blip encoding index procedure available on Cartridge Systems will allow for accurate indexing and retrieval of all documents.
c. The cost of the Cartridge System is either less than or equivalent to that of the other systems.
d. Personnel training and operation of equipment requires only a moderate level of training.

e. Total interface with an on-line transcript system is possible in the near future.

f. Storage space for all student records will be reduced by at least 95 per cent.

It is apparent that portions of some systems reviewed may have advantages over given portions of the 16mm Cartridge System. However, the entire system must be considered and a conglomeration of various pieces of each system is neither feasible nor applicable to a total records management system.

Equipment:

To implement a total records management microfilm system, the following pieces of equipment are required. The quantity, specifications, and rationale for each piece is also presented to allow for objective evaluation.

A. 1 - 16mm Cartridge, Rotary Microfilm Camera

1. Specifications:

a. Automatic feeder, capable of automatically feeding 12 inch wide documents of various thickness.

b. External exposure control.

c. Capable of blip encoding film images automatically as a product of filming.

d. 24X reduction ratio.

e. Cartridges(16mm, 100 FT.)to be interchangable so that an unprocessed incomplete cartridge can be removed and re-inserted for completion at a later time.

f. Push button operation, film load button automatically threads film.

g. Document counter

h. Odometer

i. Electrical requirements, 115 volts, 50/60 cycles.

j. Camera complete with stand and ball casters.

2. Rationale:

a. This camera has the capability to photograph all documents assigned to be microfilmed.

b. The provision for blip encoding is essential to the indexing system.

c. The camera has the ability to be used by all departments of the College due to the interchangability of the film cartridges.

d. Personnel training time will be minimal.

e. the 24X reduction ratio is a standard of the microfilm industry and allows for a 1:1 ratio of reproducability on the reader/printer.

B. 4 - 16mm Cartridge Reader/Printer:

1. Specifications:

a. Capable of retrieving blip encoded microfilm images automatically by digital push button keyboard input.

b. Electronic counter capable of automatically displaying the sequential number of the document shown on the screen.

c. Printer to be completely dry, using no toners or activator liquids or powders. Capable of producing 8½" X 11" prints.

d. Turrent rotation of 360 degrees.

e. Capable of automatically threading film from the Cartridge.

(cont'd.)

f. Film advancement by both motorized variable control and manual operation.

g. One lens per machine either 18.25X or 20.78X. Must be compatible and/or interchangeable.

h. Electrical requirements 110-115 volts, 50/60 cycles.

2. Rationale:

a. Four machines are required to meet the needs of the admissions, records and transcripts operations. These machines are to be located as follows:

1--LAC Admission and Records Office

1--PCC Admission and Records Office

2--PCC Transcript Office

b. The reader/printer must be capable of reading blip encoding film in order to be compatible with the camera and proposed index system.

c. The printer must be totally dry to allow for ease of maintenance and operation. Servicing will thus be minimal.

d. The need for two reader/printers in the transcript office has been substantiated by two on-site surveys of the work load by microfilm experts. Refer to the physical set-up and personnel needs for additional information.

e. The printer must rotate 360 degrees to allow for horizontal viewing of all documents. This is due to the vertical filming of various documents.

f. The lens magnification of 18.25X or 20.78X is necessary to achieve the approximate 1:1 reproduction of image ratio.

C. 4 - Microfiche Readers.

1. Specifications

a. 100 per cent blow back of image

b. Non-glare viewing screen 14" X 11" minimum

c. Lamp life minimum 400 hours - 150 W/24 V FDS Quartz halogen cycle

d. Fan cooling system

e. Ability to increase or decrease image size by 25 per cent without lens change.

f. Fiche carrier must have capability to open automatically for fiche insertion.

g. Lens magnification range 37X--45X

2. Rationale:

a. These readers will be used for the index system. The index for transcripts will generate approximately 5,000 pages of data processing print-out. This can be contained on twenty microfiche. Thus, accessability and convenience are apparent. A reader is needed for each work station.

b. There must be a capability for 100% blow back to allow for 1:1 ratio of reproduction of images.

c. Non-glare 14" X 11" screen is essential for full scale image reproduction and to allow for minimum employee fatigue.

D. 1 - 16mm Cartridge Reader

1. Specifications

a. Electronic counter with four digit display of the sequential number of the document shown on the screen.

b. Capable of foot pedal operation

c. Automatic threading of film from cartridge

d. Variable speed motorized or manual film drive

e. 360 degree turret rotation

f. Equipped with either 18.25X or 20.78X interchangeable lens(Bid one lens only)

g. Electric requirements 110-115 volts; 50/60 cycles

2. Rationale

a. This will be used for the data entry station in data processing. It along with the key-to-tape machine will generate the indexes for the various systems.

b. A reader only is required as there is no need to produce hard copies as in the case of a reader/printer.

c. The indexing system used will be a keying onto magnetic tape of the actual film image observed. For details refer to the index section of the proposal.

E. Key-to-Tape Data Entry Device

1. Specifications:

(Will be obtained from data processing)

2. Rationale:

a. This is the machine that actually produces the index tape. It is used in conjunction with the reader to

constitute the data entry station. It also will be located in the data processing center.

b. The degree of sophistication of this machine is dependent on the various uses that data processing might have for it. There are a number of college-wide applications which could be implemental depending upon which machine is selected.

c. A careful review of the proposed computer system should be made to insure that there will be imput compatibility.

Physical Set-Up:

In addition to the microfilm equipment proposal in the previous section, there is also a need to purchase various tables and stands which will constitute the various work station modules.

Three major work station modules are proposed. These three modules will be located at the admissions and records office,PCC; the transcripts office, PCC, and the admission and records office, LAC. The data entry station in data processing is self-contained and does not need either stands or tables.

The physical set-up and the module requirements for each work station are as follows:

A. Admissions and Records Office, PCC

1. 1-5 drawer file
2. 26" work table with convenience drawer
3. 1-corner closure
4. 26" work table with typing area

B. Admissions and Records Office, LAC

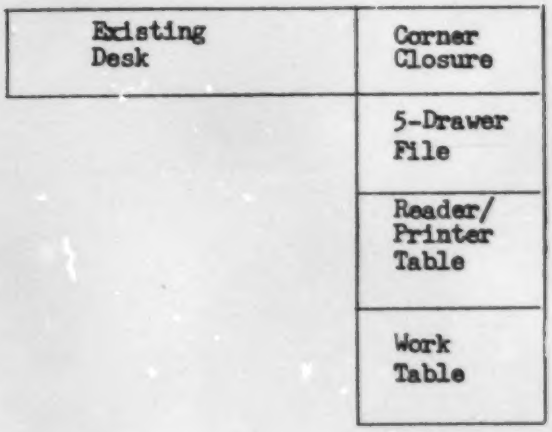
1. 1-5 drawer file
2. 1-26" work table with convenience drawer
3. 1-corner closure
4. 1-26" work table with typing area

C. Transcripts Office, PCC

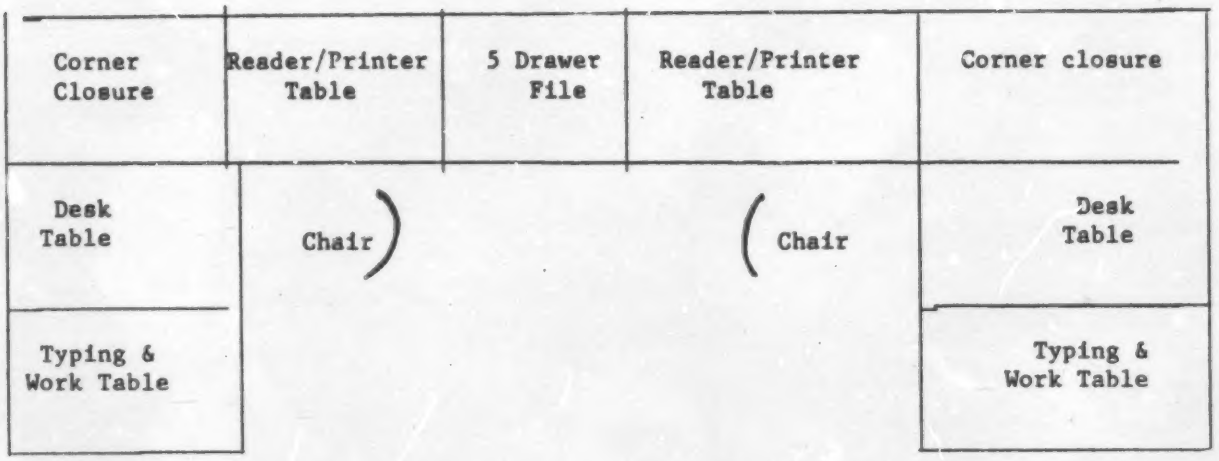
1. 1-5 drawer file
2. 2-work table with convenience drawer
3. 2-corner closures
4. 2-30" desk area
5. 2-26" work table with typing area

D. Graphic Representation

1. Admissions and Records Office, LAC and Admissions and Records Office,PCC.



2. Transcripts Office, PCC



For details on the various work station modules, please refer to appendix A.

Index System:

Two types of indexing systems are proposed. The first system which is a manually generated alpha index using the odometer settings on the reader/printer will be used for all documents other than the transcripts and grade slips file. This manual index is recorded on the cartridges as well as a master list to allow for use of cross-reference. Due to the sequencing and volume of this type of file (ie. program cards, roll books, etc.) a sophisticated, computer generated index is not necessary. For information, an example of the manual generated index is shown below.

Example:

Cartridge - Fall 1973 Record Book and Attendance Sheet

Instructor Name	Cartridge/Frame Number
J. M. Andrews	12/0002
W. S. Brooks	12/0176
P. L. Dow	12/0216
R. W. Mitchel	15/0321
C. R. Plate	26/0637

This index will be listed on the cartridge and be on file at the retrieval station.

The transcript and grade slip file requires a sophisticated computer generated index. The index will be produced by the data processing center at the College using a data entry reader and the key-to-type machine. Chronologically there will be two parts to this index. The first part, which will be all entrys prior to 1971, will be an alpha generated index. The second part, which will also be an alpha index, will include all entrys from 1971 to the present. An example of the index format is shown below. The main advantage of this type of index is that the document code allows for new transcripts or grade slips to be merged with the previous master index so that all student information is in one location on the master index.

Example:

STUDENT RECORDS

SOCIAL SECURITY	NAME	TERM	DOC. CODE	CARTRIDGE & FRAME
486-20-6404	George P. Rose	F-72	G	012/0450
		S-72	T	067/1728
275-74-8934	Ruth F. Sussman	S-73	G	127/1821
		F-74	G	217/0087
		S-74	T	289/0658
				219/0678
456-45-4738	Stan T. Thrift	F-74	T	217/2189

G = Grade Slip

T = Transcript

Interface with Data Processing:

As noted in the previous sections, the Data Processing Center of the College will be intimately involved in the development of the index system used for microfilming.

Two pieces of equipment, the data entry reader and the key-to-tape machine will be housed in the data processing center. Since all indexing will be done from the microfilm, coordination between the filming operation and Data Processing must be carefully planned. For the microfilm system to be operating by June of 1976, all filming and data entry must be completed and the index microfilmed by this data. The microfilm system cannot operate until the index system is operational. This will be the major area of coordination for the entire microfilm project.

It should be noted that data processing services has been involved in the planning and development of this proposal and no problem of implementation is foreseen at this time.

Security:

Following the recommendation of the National Microfilm Association, two Diazo duplicate cartridges will be made after data entry is completed. The duplicate cartridge will be located at each Campus retrieval station.

The original silver halide film will be stored in a vault as the security cartridge. If anything should happen to either or both of the duplicates, additional duplicate copies could be generated from the security cartridge. The location of the vault to house the security cartridges has not been determined at this time.

Supply Costs:

A. 16mm Cartridges:

There are 5,000 images per Cartridge. Total cost including processing will be $8.31 per Cartridge. It is estimated that once the backlog of documents is filmed, the yearly cost will be as follows:

a. Program Cards = 30 Cartridges = $249.30
b. Rollbooks = 12 Cartridges = $ 99.72
c. Transcripts = 50 Cartridges = $415.50
d. Status Cards = 15 Cartridges = $124.65
e. Misc. Filming = 25 Cartridges = $207.75

TOTAL =132 Cartridges =$1096.92

NOTE: An accurate estimate of the total number of cartridges required to complete the backlog of documents cannot be made until an assessment of the files in the PCC basement has been completed. It is believed that approximately 300 Cartridges will be used to complete the backlog of all records at this time. This is only an estimate.

B. Labor Costs in Filming:

It is recommended that casual help be employed to assist in the filming of the backlog of documents. The labor requirements for each project are as follows:

a. Transcripts = 105 days
b. Rollbooks = 24 days
c. Program Cards = 75 days
d. Status Cards = 18 days
e. Misc. Filming = 10 days

TOTAL = 232 days = 1856 hours = $6366.

(Assume Clerk I Schedule)

After the backlog is completed, filming of current documents will be assigned to the current clerical staff with no increase in labor costs.

C. Miscellaneous Supply Costs:

a. Duplicate film = $ 6.65 per cartridge
b. Duplicate Paper = $31.55 per 500' roll

D. Labor Costs in Indexing:

a. Keypunching for 1971-1975 transcripts = 400 hours
b. Manual indexing for 1927-1971 transcripts = 900 hours.
c. Manual indexing for Program Cards, Rollbooks, etc. = 25 hours = $85.00

E. Labor costs to Data Processing For Index Systems Design:

No estimate of cost for this system has been made. However, this system will be developed by the present Data Processing Staff with no additional labor required.

IMPLEMENTATION SCHEDULE

Timeline:

The following timeline is presented as a guideline for systems planning. Adjustments may have to be made once filming begins.

DATE	ACTIVITY
October 17, 1975	Microfilm Proposal and Retention Manual presented to Vice President Student Personnel Services.
October 23, 1975	Review of Proposal by the President's Cabinet.
November 3, 1975	All requisitions processes and announcement for bids prepared.
November 21, 1975	Closing Dates for Bids.
November 28, 1975	Purchase Orders issued for Equipment.
December 31, 1975	All equipment received and operational.
January 5, 1976	Training of film operators begin.
Jan. 5 - June 1, 1976	Backlog of all Program Cards, Rollbooks, Status Cards and Miscellaneous filming completed.
June 1 - Dec. 1,1976	Transcript filming completed; index systems completed.
Dec. 1, 1976	Microfilm, COM transcript System in operation.

Personnel Needs:

As mentioned in the supply costs section there will be a need for additional personnel to assist in the backlog filming and the development of the transcript index. The estimated costs are as follows:

1. Personnel for Filming = 1856 hours = $6366
2. Personnel for Keypunching = 1300 hours = $5700

Once the backlog is completed no additional personnel will be required to maintain the systems.

Future Projections:

As indicated on the timeline, approximately one year will be required to implement the total microfilm system. Maintenance of all segments other than transcripts and grade slips will be a routine operation after June 1, 1976. However, the transcript system will need additional reassessment.

The microfilm proposal is but phase one in a projected two phase system to upgrade the current transcript system. It is hoped that within 18 months to 2 years that an interface between an on-line system and microfilm can be made so that the current manual generation of transcripts can be eliminated.

The microfilming of all past documents will solve the search process. An on-line transcript format will solve the manual generation of transcripts via the typewriter as currently done.

It is evident then that additional interfaces must be achieved with Data Processing Services in order for the proposed system to be operational. This has been explored with the Data Processing Staff and consensus to the implementation plan has been achieved.

APPENDIX A

3M DESCRIPTIVE BROCHURES

of the

PROPOSED EQUIPMENT

MODULAR STAND SPECIFICATIONS *

Admissions and Records Offices (LAC & PCC)

QUANTITY	DESCRIPTION
2	5 drawer cartridge file stands with locks- 22" wide, 30" deep, 30" high.
60	Cartridge racks for 16mm cartridges (6 per drawer)
4	27"x30" top panels with modesty panel
2	30"x30" corner closures
4	30"x30" end panels with capability of a 26" or 30" high top panel attachment.

* Bidder must respond to all items under modular stands since the components needed must be interlocking for structural support.

WORK STATION - TRANSCRIPT

QUANTITY	DESCRIPTION
1	7 drawer cartridge file stand, with locks, 22" wide, 30" deep, 40½" high.
42	Cartridge racks for 16mm cartridges (6 per drawer)
2	30"x30" corner closures
2	46"x30" top panels with modesty panels.
4	27"x30" top panels with modesty panels.
8	30"x30" end panes with capability of attaching top panels 26" or 30" high.
2	Convenience drawers, 46" wide
2	Convenience drawers, 27" wide

CONSOLIDATED ITEMS FOR MODULAR WORKSTATIONS*

Admissions and Records (LAC & PCC) and Transcript

QUANTITY	DESCRIPTION
1	7 drawer cartridge file stand with locks, 20" wide, 30" deep, 40½" high.
2	5 drawer cartridge file stand with locks, 22" wide, 30" deep, 30" high.
102	Cartridge racks for 16mm cartridges (6 per drawer)
2	46"x30" top panels with modesty panels.
8	27"x30" top panels with modesty panels.
4	30"x30" corner closures.
12	30"x30" end panels with capability of attaching top panels 26" or 30" high.
2	46" wide convenience drawers.
2	27" wide convenience drawers.

* Bidder must respond to all items under Modular Stands since the work stations components needed must be interlocking for structural support.

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